
Volume 15 Number 1
Winter 2004

Kentucky Natural Resources and Environmental Protection Cabinet



State of Kentucky
Ernie Fletcher, *Governor*

**Natural Resources and
Environmental Protection Cabinet**
LaJuana Wilcher, *Secretary*

**Department for Environmental
Protection**
Robert Logan, *Commissioner*

Department for Natural Resources
Hugh Archer, *Commissioner*

**Department for Surface Mining
Reclamation and Enforcement**
D. Allen Luttrell, *Commissioner*

Editor
Design & Production
Cindy Schafer

Co-editor
Kerry Holt

Agency Coordinators
Martin Bess, Maleva Chamberlain,
Lillie Cox, Mary Jean Eddins,
Matt Hackathorn, Gwen Holt,
Leslie Cole, Cecilia Mitchell,
Lee Ruggles, Julie Smither,
R.C. Story

Land, Air & Water is published quarterly by the Natural Resources and Environmental Protection Cabinet with state and federal funds. Subscription to this publication is free. Write the Office of the Secretary, Communications Staff, 514 Capital Plaza Tower, Frankfort, KY 40601 or phone (502) 564-5525 to have your name added to the mailing list. Address changes and deletions also should be sent to this office or faxed to (502) 564-3354.

Wilcher named cabinet secretary

By Mark York
Office of the Secretary

A former U.S. Environmental Protection Agency (EPA) official has been appointed secretary of the Natural Resources and Environmental Protection Cabinet. She will now serve as secretary of the newly constituted Environmental and Public Protection Cabinet.

LaJuana S. Wilcher, 49, of Bowling Green, was tapped by Gov. Ernie Fletcher to take the state's top environmental and public protection position.

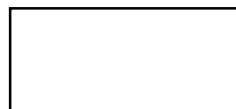
Wilcher served as the assistant administrator for water for the EPA during the administration of President George W. Bush, Sr. She had returned to practice law in Bowling Green after working 19 years in Washington, D.C.

"I believe we can set a course to protect the environment, to conserve, protect and restore the waters, woods and wildlife habitat that we have been blessed with in this great land we call home," Wilcher said. "If we are to stimulate jobs and the economy, we must protect the environment. I believe the two go hand in hand."

Wilcher received a biology degree from Western Kentucky University, then a law degree from the Chase College of Law at Northern Kentucky University. In addition to her work at the EPA, Wilcher also served as a special assistant to the general counsel at the U.S. Department of Agriculture, and as a naturalist for the U.S. National Park Service at Mammoth Cave National Park.



LaJuana Wilcher was sworn in by Judge Laurance VanMeter (far left) as Natural Resources and Environmental Protection Cabinet secretary on Dec. 22. Ed Tivol (center), of Herndon, Va., and Gov. Ernie Fletcher (far right) witnessed the ceremony. Photo provided by Creative Services



Online

Visit *Land, Air & Water* magazine on the World Wide Web at
www.environment.ky.gov/law/default.htm

The Natural Resources and Environmental Protection Cabinet does not discriminate on the basis of race, color, national origin, sex, age, religion or disability and provides, on request, reasonable accommodations including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in all services, programs and activities. To request materials in an alternative format, contact the Office of the Secretary, Communications Staff, 514 Capital Plaza Tower, Frankfort, KY 40601 or call (502) 564-5525. Hearing- and speech-impaired persons can contact the agency by using the Kentucky Relay Service, a toll-free telecommunication device for the deaf (TDD). For voice to TDD, call (800) 648-6057. For TDD to voice, call (800) 648-6056.

Printed on recycled paper with state and federal funds

what's inside

**Land
Air & Water**

Winter 2004
Volume 15 Number 1

Features

**High-performance schools
set the example 13**

Kentuckians visit North Carolina schools
to learn about energy-efficient designs.



**What you should
know about public
notifications 4**

Kentuckians need to know
what to expect when a
potential health risk affects
their water supply.

Pruden-Fonde 14

50 acres of an abandoned
mining operation is cleaned
up and is now a productive
vegetated site.



**Printed by Post Printing
Lexington, Kentucky**

Contents

Wilcher named cabinet secretary	Inside cover
Conservation easements—win-win for landowners and conservationists	1
Community meetings help citizens learn about new air quality standards	2
The digital divide	3
Children's health—are Kentucky's children at risk?	5
Division making schools safer when dealing with asbestos	6
Tree harvest important to health of Tygarts State Forest	7
Waste management looks to improve high school sports	8
The nature of Kentucky—then and now	9-10
Let's polish Kentucky's tarnished beauty	11
Preparations in place for upcoming Youth Environmental Summit	12
Green Building Council in Kentucky	13
Patton appoints panel members for 2004	15
Workshops promote energy-efficient home construction	16
Citizens file appeal of agreed orders	16
Setting the stage for continued success	17-18
Awards	19-20
Valuable reference guide now available through the KSNPC	Back cover

On the Cover

Ice formations grace a rock face at High Falls in Wolfe
County, Ky. Photo by Merle M. Wasson, Natural Resources
and Environmental Protection Cabinet.

RIGHT: *More than 190 acres spanning five tracts flanking Ohio County Park in Hartford, Ky., are now permanently protected by conservation easement. Heritage Land Conservation Fund dollars were used for the acquisition.*

BELOW: *Using Heritage Land Conservation Fund money, the Shelby County Fiscal Court was able to purchase and place a conservation easement on 27 acres of natural area adjacent to the 200-acre Clear Creek Park and Lake Shelby. Photos provided by the Heritage Land Conservation Fund Board*



Conservation easements— win-win for landowners and conservationists

By Barbara M. Pauley, Office of Legal Services
and Hugh N. Archer, Department for Natural Resources

If you want to protect the natural features of your land during your ownership and forever after, a conservation easement may be the option for you. In a typical land transfer, the buyer obtains a bundle of rights collectively known as “fee title.” This bundle usually includes rights to develop, to use minerals and water, to lease, to hunt and to cut down trees. Alternatively, a landowner can sell some of these rights and still maintain ownership of the property, which involves transferring a less-than-fee interest.

Included in these lesser transfers is the conservation easement—a voluntary, legally binding, recorded agreement negotiated between a landowner and a land trust or government agency that permanently limits the uses of a tract of land in order to protect its natural, historic, scenic or conservation values. Since the 1970s, conservation easements have grown in popularity and are now the preferred tool for an expanding number of land trusts and public agencies wanting to protect important natural and cultural resources competing against escalating urban sprawl. Benefits of conservation easements include the ability to leave land in private

ownership, income tax and potential capital gains tax deductions, reduced property and estate taxes, and the reassurance that certain protections remain in force after ownership changes hands. Conservation easements do not automatically provide for public access unless the landowner-grantor specifically allows it.

Historically, not all easements were treated as perpetual, and only certain kinds qualified for tax deductions. In time, this proved to be problematic for many conservation programs’ requirements, and the need arose for a uniform law on easements that would be accepted by the Internal Revenue Service and adopted by the states. In 1988, the Kentucky General Assembly adopted the Uniform Conservation Easement Act identifying four widely recognized purposes served by conservation easements—retaining natural, scenic or open space values; providing public access for agricultural, forest, recreational or open-space purposes; protecting natural resources and unique wildlife areas; and preserving historical, architectural, archaeological or cultural aspects of property. All four types of easements

qualify for tax deductions as long as gift and mineral rights remain intact. Additional tax deductions are proposed in current federal legislation that will provide a break even if the easement is sold rather than donated. Conservation easements are valued by subtracting from the appraised fair market value of the property with the restrictions on it.

Because future easement holders must be able to understand a property’s features at the time the easement was created, government and nongovernment programs alike call for reliable baseline documentation and monitoring to prevent improper future uses of the property. Baseline documentation describes in detail the condition of the property when the easement is recorded. This package includes a comprehensive map identifying important landscape features (roads, structures, fences, trails, wetlands and bodies of water) and special features, such as rare plants that require protection. Ideally, the map also defines enforceable property boundaries and contains photographs of structures, improvements and wooded areas.

Continued on Page 15

Community meetings help citizens learn about new air quality standards

By Lona Brewer
Division for Air Quality

Last year, the Division for Air Quality's Program Planning and Administration Branch staff traveled throughout the state scheduling and attending more than 20 meetings with local government and business leaders on the potential impacts of the more stringent 8-hour ozone and fine particulate standards.

These two new National Ambient Air Quality Standards will be implemented in Kentucky and the nation over the next several months. Both the 8-hour ozone and fine particulate (PM_{2.5}) standards were adopted by the U.S. Environmental Protection Agency (EPA) in 1997. After undergoing extensive legal challenges, the standards are finally scheduled for implementation before the end of 2004.

The first new standard to take effect will be the 8-hour ozone standard. Ozone, a colorless gas, is the major component of smog. It can present a serious air quality problem for healthy people and can cause severe problems for people with existing respiratory or pulmonary illnesses, the very young and the elderly. Ground-level ozone pollution is formed during the hot summer months by a chemical reaction between volatile organic compounds (VOCs) and oxides of nitrogen (NO_x), heat, strong sunlight and humidity. Sources of VOCs include automobiles, trucks, buses, gasoline stations, some industries, print shops, consumer products (such as paints and cleaners) and off-road engines, such as those found in lawn and garden equipment, construction equipment and locomotives. The biggest sources of NO_x emissions are typically large industry and combustion sources including electric utilities. Because there are many sources of VOCs and NO_x, ozone is difficult to control. Although ozone levels have declined in many areas of the state, research has shown that lower levels of ozone over longer periods can be even more harmful than the "peaks" regulated under the previous standard.

The old ozone standard was a 1-hour

standard set at .120 ppm (parts per million). A monitor could record up to three exceedances of this standard in three years and still remain in compliance with this standard. If a fourth exceedance was monitored, the area was considered in violation.

The new 8-hour standard set at .08 ppm, however is more stringent than the old 1-hour standard and was designed to

add an additional level of protection for children, the elderly and people with respiratory problems. Monitoring data is averaged over a different time period, and the fourth-highest 8-hour level for the monitoring season is used to help determine whether an area is meeting the standard. That fourth-highest average for

Continued on Page 11

Ozone monitoring results in Kentucky 2001-2003 monitoring data

.085 or greater—Boone, Kenton, Campbell, Oldham, Boyd and Christian counties.

.083 - .084—Greenup, Jefferson and Livingston counties

.082 and below—Carter, Pike, Scott, Fayette, Jessamine, Pulaski, Bell, Perry, Bullitt, Hardin, Edmonson, Warren, Simpson, Hancock, Daviess, Henderson, McLean, Trigg, McCracken and Graves counties.

PM_{2.5} monitored values in Kentucky 2000-2002 monitoring data

Violation of the annual standard—Campbell, Boyd, Jefferson, Bullitt, Fayette, Bell, Perry and Daviess counties.

Attaining the annual standard—Carter, Pike, Franklin, Madison, Laurel, Hardin, Warren, Christian, Henderson and McCracken counties.

Potentially impacted due to MSA—Boone, Kenton, Gallatin, Grant, Pendleton, Bracken, Trimble, Oldham, Henry, Shelby, Spencer, Nelson, Scott, Woodford, Jessamine, Clark, Bourbon, Greenup, Meade, Hancock and McLean counties.

You may view the original maps submitted for this article by the Division for Air Quality by clicking on "*Community meetings help citizens learn about new air quality standards*" under "Contents" on the Land, Air & Water web page.

The digital divide

By Matt Hackathorn
Division of Waste Management

As the pulse of 21st century electronics surges forward, today's marketplace remains charged with new and innovative equipment. Millions of gadgets, from TVs to computers to cell phones, become obsolete and end up in landfills each year. It's no secret that such devices contain heavy metals and toxic chemicals. The question is—are we managing electronic waste appropriately, or are we risking the future of our environment?

Americans just love their toys. Computers, televisions, cell phones, Palm Pilots, monitors—they're all staple necessities of the Information Age. But many environmentalists believe the e-fallout driven by America's zeal to climb the Pentium ladder requires legislative attention—since electronic equipment containing hazardous components comes and goes these days almost as quickly as the change in seasons. Others contend that no real evidence exists linking e-scrap to contamination problems in landfills.

So states are faced with the e-waste debate—to regulate or not to regulate? According to the National Caucus of Environmental Legislators, 29 states introduced bills this year that dealt with environmental and fiscal impacts of e-waste. While the Kentucky legislature has yet to address the issue, one certainty is that the e-dilemma is not going away any time soon.

Electronics make up the fastest growing portions of the American solid waste stream. In fact, the National Safety Council projects that more than 500 million computers and monitors will become obsolete and discarded by 2007—and of course the majority of that equipment will almost certainly be replaced with new, keeping the e-cycle going.

Under current statute Kentuckians can set their old TVs, computers and monitors out with the rest of the household garbage provided the local landfill will accept them. However, businesses and industry are required to manage e-waste by either paying to have e-scrap recycled or donating the equipment to schools and nonprofit organizations. Federal law prohibits business and industry from sending broken and obsolete electronics to the landfill.

Kentucky Resource Conservation and Local Assistance (RCLA) Branch officials estimate that around 2 percent of the Commonwealth's annual municipal solid waste is electronic. In other words, some 94,000 tons of e-scrap went to Kentucky landfills last year alone. In addition, the waste industry estimates that 70 percent of all heavy metals found in landfills are from e-scrap.



By 2007, it is projected that 500 million computers and monitors will become obsolete and discarded due to new and improved models showing up on the market daily. 94,000 tons of e-scrap, including cell phones, personal data assistants (Palm Pilots) and other electronics, went to Kentucky's landfills last year. Graphic by Cindy Schafer

All electronics contain at least a little bit of such heavy metals as lead, mercury, chromium and cadmium, but many components, such as TVs, computers and monitors, contain significant amounts of heavy metals. For example, TVs, computers and monitors—particularly older ones—each average about four pounds of lead (depending on their size, make and vintage).

Throw in the other toxic materials found in e-scrap, like cathode ray tubes (CRTs provide lighting for TV screens and computer monitors), brominated flame retardants and the various types of batteries used to power the equipment, and e-waste puts a literal spin on the old cliché—get the lead out. Ironically, the electronics industry did just that with the invention of flat screen TVs and monitors. The only problem is the industry traded the lead for mercury in the flat screen CRTs. Mercury is much more toxic (and mobile) than lead when released into the environment.

Some states, including California, Maine, Massachusetts, Minnesota and Oregon, have already passed e-waste related legislation. The new California law, which goes into effect next spring, is by far the toughest—imposing a \$6 to \$10 fee on all new TVs and computers to help foot the state's recycling bill, and requiring the elimination of toxic materials like lead and mercury from electronic products sold in the state by 2007.

Whether the Kentucky General Assembly plans to address the e-waste issue during the 2004 session is currently unknown, but responsible citizens may easily rid themselves of broken and outdated electronic equipment through recycling. The best time to recycle old equipment is when it's time to buy new. Major manufacturers offer take-back programs. You may need to negotiate the "trade-in" as part of the expense for the new machine.

Citizens may learn more about e-waste by calling Tom Heil of the RCLA Branch at (502) 564-6716 or by visiting the Kentucky Division of Waste Management Web site at www.waste.ky.gov.



Public notification

another public health benefit from public water systems

By Jeff Grubbs
Division of Water

Public water systems must deliver safe and reliable drinking water to their customers 24 hours a day, 365 days a year. If a water supply were to become contaminated, serious health problems would threaten large numbers of people. A water system is required by state and federal law to notify its customers anytime it receives a notice of violation or a situation poses a risk to public health.

The 1996 Safe Drinking Water Act Amendments mandate revised public notification requirements to ensure consumers will always know about the safety of their drinking water. If a serious problem poses a risk to consumers' health, they must be notified within 24 hours and must also be provided with information concerning what they can or should do in response to the problem.

The new federal requirements took effect nationwide May 6, 2002. They require public notification when a public water system violates a standard or

requirement set by the U.S. Environmental Protection Agency (EPA) or the state of Kentucky or the system receives a notice of violation.

The new requirements include notifying consumers in a timely manner and using simplified language about actual or potential health effects associated with their drinking water. The EPA requires some specific language in every public notice.

Public notification also provides an opportunity for water systems to educate their consumers and build trust through open, honest sharing of information. Notices used in this positive way help consumers understand the basis for rate increases that may be needed for additional drinking water treatment and protection.

Key issues of public interest

Changes to timing and distribution of the public notice are based upon the potential health impact of the violation or event. Violations and events are separated into three tiers based on potential health impacts and the classification (or type) of the water system. The three tiers are:

- Tier 1 (immediate concern) requires public notification within 24 hours.
- Tier 2 (long-term concern) requires public notification within 30 days.
- Tier 3 event requires public notification within 1 year.

Immediate health concerns, such as a boil water notice, are referred to as Tier 1 events, also known as acute threats. Tier 2 events result when the water system discovers a monitored contaminant is above the maximum contaminant limit set in

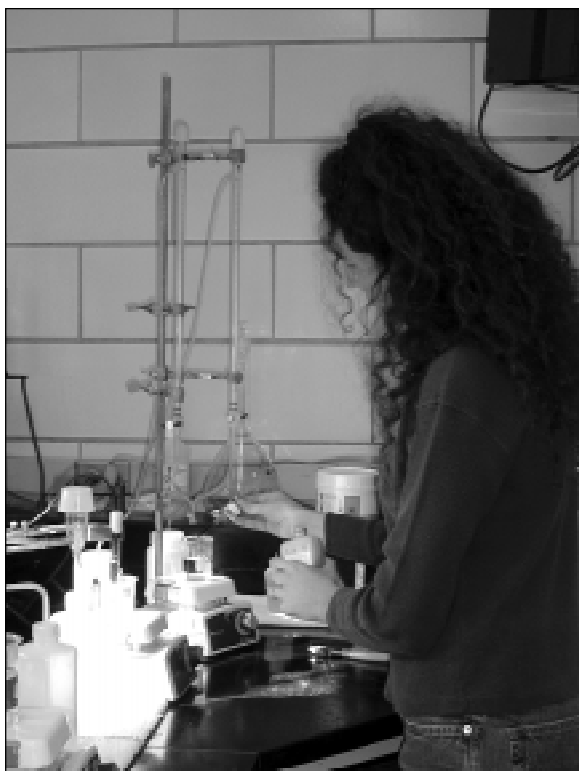
Each public notice must address 10 items:

1. Description of the violation or situation.
2. When the violation or situation occurred.
3. Potential health effects.
4. The population at risk.
5. Whether alternate water supplies should be used.
6. Actions consumers should take.
7. What is being done to correct the violation/situation.
8. When the system expects to resolve the problem (return to compliance).
9. Name, number and business address for more information.
10. Standard distribution language.

the regulations. Tier 3 events require annual notice and include violations of monitoring or testing procedures.

To assist water systems in implementing the new public notification requirements, the EPA and the Association of State Drinking Water Administrators developed a Public Notification Handbook that includes sample public notices. The handbook is available on the EPA's public notification Web site <http://www.epa.gov/safewater/pn.html>.

For more information on the new public notification requirements, contact the Kentucky Division of Water, Drinking Water Branch at (502) 564-3410 or the EPA's Drinking Water Hotline at (800) 426-4791 (Web site <http://www.epa.gov/safewater/drinklink.html>). Also, check out the EPA's reference guide at <http://www.epa.gov/safewater/pws/pn/guide.pdf>.



This laboratory technician is testing for alkalinity from a local water source. There are a variety of tests and filtering processes performed before water is pumped to reservoirs or holding tanks for consumption.

Photo by Cindy Schafer

Children's health—**are Kentucky's kids at risk?**

By Leslie Cole

Environmental Quality Commission

Children today face an array of exposures to potentially toxic environmental hazards. Hazardous substances such as lead, PCBs, solvents, asbestos, radon, pesticides and air pollution have found their way into the homes, schools and playgrounds of our children.

When it comes to environmental pollutants, children are uniquely vulnerable. "Unlike adults, children are in an ever-changing state of growth and are especially sensitive to environmental exposures," said Dr. George Geller, a pediatric environmental health specialist from Emory University.

Geller and a panel of six other experts gathered on Oct. 16 to share their views and recommendations on how to better protect Kentucky's children from environmental hazards at a public forum sponsored by the Environmental Quality Commission and the Children's Environmental Health Working Group. "Poor environmental quality is directly responsible for 25 percent of all preventable illnesses, and two-thirds of this occurs among children," said Wayne Garfinkel, the Children's Health Coordinator for the U.S. Environmental Protection Agency (EPA) Region 4. The total

economic cost to society for childhood diseases linked to environmental pollutants is estimated to be \$54.9 billion.

Forum panelists and audience members shared concerns and called for a number of actions to protect the health of Kentucky's children. The Rev. Louis Coleman, director of the Justice Resource Center, expressed the need for more public health evaluations, a greater focus on addressing environmental problems in and near schools, and for stronger state efforts to curb industrial emissions of toxic chemicals. Other suggestions included:

- Expanding prevention and outreach strategies to health care providers, school officials and daycare providers.
- Developing a statewide action plan to promote healthy homes and schools.
- Expanding partnerships to prioritize and coordinate statewide efforts to address children's environmental health concerns.
- Strengthening tracking efforts for asthma, neurological disorders and other childhood diseases.
- Expanding the use of Geographic Information Systems (GIS) and other data management tools to better identify, assess and track the distribution of diseases, exposures and risk factors.

Among one of the more serious threats to children is lead poisoning from lead-based paint found in many older homes. In Kentucky, 6 percent of the 21,812 children tested by local health departments in 2001 had unsafe levels of lead in their blood.

Childhood cancer is a growing concern as well. Cancer is the leading cause of death by disease among children between one and 19 years of age in the United States. The EPA has determined that infants up to age two are, on average, 10 times more vulnerable to carcinogenic chemicals than adults, and for some cancer-causing agents are up to 65 times more vulnerable.

In Kentucky, 112 cases of childhood cancers were diagnosed in 2000 compared to 95 cases in 1996—an 18 percent increase. However, Dr. Timothy Aldrich, Department of Epidemiology and the School of Public Health at the University of Louisville, indicated that childhood asthma is of greater concern.

"The number of children with asthma has doubled in the United States in the past 15 years," said Barry Gottschalk, executive director of the American Lung Association of Kentucky. During 2000 and 2001, 12,409 Kentuckians were hospitalized for asthma, 34 percent of which were children under the age of 14.

Continued on Page 15



ABOVE: *Ebony Cochran voiced her concerns about the health of children living near Rubbertown, an industrial area of Louisville.* Photo by EQC
LEFT: *Exposure to toxic hazards can lead to childhood asthma and cancer, contributing to increasing medical expenses.* Graphic by Cindy Schafer

Division making schools safer when dealing with asbestos

By Parker Moore
Division for Air Quality

Since its bootstrap beginnings 15 years ago, Kentucky's Asbestos in Schools program has made a difference.

In 1986 the federal Asbestos Hazard Emergency Response Act (AHERA) was signed into law and required all schools, kindergarten through 12th grade, to have their buildings inspected by asbestos professionals before October 1988.

The inspections were to identify materials that contained asbestos and to assess their physical condition with respect to potential fiber release. The inspection findings were to be documented in asbestos management plans that committed the schools to strategies for handling the materials safely.

Asbestos is a naturally occurring mineral fiber and can be added to a variety of building products to add strength, heat insulation and fireproofing.

Asbestos materials in good condition do not pose a hazard to building occupants, but asbestos materials that are in poor condition could release fibers into the air either through disturbance or deterioration, creating possible health hazards such as asbestosis and lung cancer.

Kentucky adopted the federal AHERA law and established a state AHERA program administered by the Division for Air Quality (DAQ) in 1988. The division's job was to review all of the state's 3,800 management plans and conduct spot-check inspections of school buildings to validate the plans' findings and strategies.

Since 1988, division staff have approved all of the plans and conducted validating inspections on hundreds of schools. In the process, lessons have been learned, and success stories have been told.

One lesson learned by a Kentucky school district began with a computer-wiring upgrade that inadvertently burrowed into an asbestos-containing ceiling. The wiring work was done without first checking the school's asbestos manage-

RIGHT: *Steam pipes and boilers in steam-heated schools are often insulated with asbestos materials.*

BELOW: *An entrance to an asbestos removal enclosure. The work area is under negative pressure from filtration equipment inside, preventing asbestos fibers from escaping.*

Photos by
Division for Air Quality



ment plan, which called for safe asbestos removal prior to disturbing the ceiling. As the work progressed building custodians, who are provided with asbestos awareness training, reported possible asbestos problems to the DAQ. Division inspectors investigated and confirmed that the ceiling in question contained asbestos. School officials immediately evacuated students to another building for two weeks while the asbestos-contaminated building was thoroughly cleaned.

This valuable lesson learned turned into a success story for the school not only because it was able to return its students to a squeaky clean building, but it also got out the message to other schools across the state to pay attention

to their asbestos management plans.

The DAQ also learned an important lesson—that schools need to be aware of their responsibilities to comply with AHERA laws and protect students from asbestos hazards.

To help meet these needs, the DAQ won a grant from the U.S. Environmental Protection Agency (EPA) to conduct training sessions statewide for each school's asbestos contact person. Since 1999, when this outreach program began, division-contracted trainers have presented 42 of these training sessions at no charge to schools.

As part of complying with the law, schools must perform periodic inspections every three years for materials containing asbestos and provide yearly notification to parents, teachers and employees regarding the school's asbestos management plan or any actions taken related to asbestos management. Otherwise, schools can be subject to civil enforcement actions by the EPA and the DAQ.

As Kentucky's AHERA program moves into its 16th year, the DAQ's goals for AHERA are to ensure that all schools' management plans are current and compliant, to monitor schools' adherence to their asbestos management plans and to promote safe asbestos management in schools through outreach and compliance assistance. ❖

Tree harvest important to health of Tygarts State Forest

By Eric Gracey and Gwen Holt
Division of Forestry



ABOVE: This haul road sign is located along a trail in the Tygarts State Forest.

BELOW: Areas of the forest floor on the north- and eastern-facing slopes will be harvested due to the number of damaged trees from the January 2003 ice storm.
Photos by the Division of Forestry

The ice storm of February 2003 not only created hardships for many Kentuckians through the loss of mature neighborhood trees and consequently the loss of electricity, but it also caused hardships for Kentucky's forests. Tygarts State Forest in Carter County received severe damage to approximately 245 of its 800-acre forest.

The Kentucky Division of Forestry manages Tygarts State Forest, and an evaluation of the damage prompted the division to schedule and conduct a salvage timber harvest on the most heavily damaged areas of the forest. The areas harvested are primarily on the north- and eastern-facing slopes where the ice accumulation was greatest.

How did the division determine which trees needed to be removed? Trees with more than 30 percent canopy loss were marked for harvest, totaling more than 5,000 trees with an estimated 1.1 million-board foot of volume. Tree species, height and diameter were measured and recorded for every tree identified for removal.

"The division advises forest landowners daily on proper management of their forests. We must practice what we preach by demonstrating proper stewardship on state forests."

Leah W. MacSwords, director of the Division of Forestry

Why not leave them in the forest? "The division advises forest landowners daily on proper management of their forests. We must practice what we preach by demonstrating proper stewardship on state forests," stated Leah W. MacSwords, director of the Division of Forestry. "It is important for the health of not only Tygarts State Forest but also the surrounding state, federal and private forestlands that we harvest the damaged trees. If we don't address the damage at Tygarts State Forest, the health and vigor of the forest as a whole will continually deteriorate," MacSwords continued.

Forest pests such as bark beetles and borers are opportunistic and thrive in areas where trees are damaged and stressed. In addition, broken branches and treetops are prime areas for decay and rot. The harvesting is necessary to maintain the health of the forest, and the removal of these damaged trees will allow sunlight and space for the young vigorous undamaged trees in the understory to thrive and replace the harvested trees.

There are other benefits to removing damaged trees. One is making the trails safer for hikers who frequent the many trails throughout the forest, and another is to reduce the fuel load in the forest to diminish the wildland fire risk to the area. The division took extra precautions to protect streams and left a few damaged trees in the areas for wildlife habitat. The harvest will be monitored frequently to ensure compliance with the Kentucky Forest Conservation Act and the harvesting contract.

Tygarts State Forest is used to conduct master logger training and other educational programs and serves as a research and demonstration forest. It has a best management practices trail as well as some experimental planting projects. "We are practicing what we preach. We recommend salvage harvests and other forest management activities to private forestland owners, so it just makes sense that we use these same management tools on our state forests," said MacSwords.

The Tygarts State Forest will be closed to public access until March 31, 2004, while the harvesting is taking place.



Waste management looks to improve high school sports

By Matt Hackathorn
Division of Waste Management

The “gridiron”—it’s a tough and menacing term that conjures up emotions of the football field of play—where American boys assemble to exhibit the art of teamwork, to compete with speed, strength and stamina.

Real students of football know the term gridiron dates back to the late 19th century when the ball was still round and yard lines were painted horizontally and vertically. Today the term gridiron remains synonymous with other distinctive football expressions

like frozen tundra, sudden death and crumb rubber...

Crumb rubber?

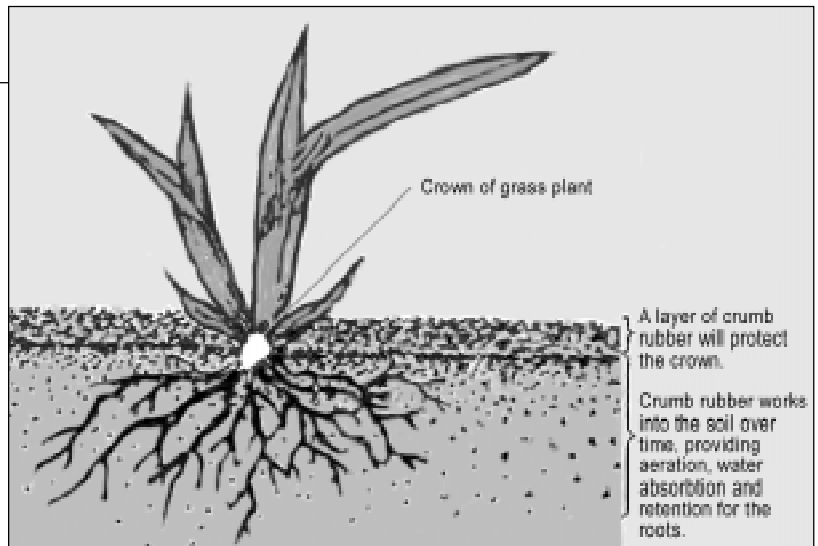
Well, maybe the crumb rubber connection to football is a bit of a stretch, but an innovative grant program recently approved by the Natural Resources and Environmental Protection Cabinet (NREPC) hopes to make crumb rubber as common to Kentucky football as the forward pass.

Rep. Tom McKee, D-Cynthiana, promoted the idea of

blanketing Kentucky high-school football fields with crumb rubber to help serve a number of useful purposes. A top dressing of crumb rubber on an athletic field can protect the turf’s sensitive rhizomes and tender root system under the stress of cleated traffic. That means the players and coaches from schools incorporating a crumb rubber plan will no longer have to alternate between choking on dust or slopping through mud by the second game of the season.

The material also offers a nice layer of padding to possibly reduce the risk of player injury. And from a waste management perspective, an effective athletic field maintenance program presents Kentucky with another beneficial reuse option for the five million-plus waste tires generated in the Commonwealth each year.

“Many high schools attempt to maintain one playing field for high-school football practice, seventh- and eighth-grade football games, and boys’ and girls’ soccer, and that just wears the grass



A thin layer of crumb rubber can be applied directly onto real grass to protect the plant’s delicate crown, while reducing wear and divots.

Graphic by Division of Waste Management

out,” said McKee, who learned about the new turf management system from Harrison County football coach Ray Graham. “This program is good in every way. It offers funding to assist schools in improving athletics while helping to recycle a major solid waste issue.”

Coach Graham learned about the crumb rubber process from Danville High School football coach Sam Harp. Danville received a grant from the Ford Motor Company to apply the material to its practice field this spring. “We like it so far,” said Harp, who was the first coach in Kentucky to implement crumb rubber technology with grass. We had 88,000 pounds of rubber put on the field this year, and next year we’ll apply an additional 12,000 pounds. It gives us a softer surface, and the field has more grass now than ever at this time of year.”

Soon Kentucky high schools will have the opportunity to compete for crumb rubber funding. Former NREPC Secretary Hank List earmarked \$1 million in matching grant funds over the next two years for schools willing to invest in the program. The funding comes from the state’s Waste Tire Trust Fund, an endowment established in 1998 by the Kentucky General Assembly to receive fees collected from new tire sales. NREPC officials estimate the total application expense for one athletic field to cost \$35,000 to \$40,000. The cabinet plans to match up to \$20,000.

“We’re still developing the grant application process and defining the assessment criteria for funding,” said Resource Conservation Supervisor Todd McCoy. “Hopefully, that process will be completed soon. This is a very positive program, and we’re looking forward to promoting it across the Commonwealth.”

High schools interested in learning more about the application of crumb rubber on athletic fields may call Coach Harp at (859) 238-1308 or McCoy at (502) 564-6716.



The nature of Kentucky

then and now

By Cecilia Mitchell
Kentucky State Nature Preserves
Commission

With the recent attention given to the 200th anniversary of the Lewis and Clark expedition, it is a good time to reflect on the changes to Kentucky's natural environment and wildlife habitat during the last two centuries.

The historic journey ventured through Kentucky where the pair met along the banks of the Ohio River. Along with a few recruited Kentuckians willing to add an adventure to their pioneering existence, Lewis and Clark set out to map the continent's interior. Throughout the 8,000-mile expedition, they collected many species of animal, mineral and plant life to study.

The maps on the adjoining page depict the Commonwealth at the time of the Lewis and Clark exploration and the situations that currently exist today. It is evident that impacts to the environment and habitat have been great over the past 200 years.

For example, back then Kentucky was home to approximately 1.9 million acres of wetlands, 2.5 million acres of prairie and 22 million acres of old-growth forest. With the development of the interstate highway many trees disappeared, and the construction of locks and dams caused many species that used the shallow rocky river bars as their habitat to decline.

Today, the state has only 650,000 acres of wetlands, less than 1,000 acres of prairie and only 5,000 acres of fragmented old-growth forest. Wetlands were abundant at the time of the Lewis and Clark trip, providing habitat for the now extinct ivory-billed woodpecker, once native to Kentucky. Fortunately, our wetlands still provide a habitat for copperbelly watersnakes, swamp rabbits and many other species now considered rare.

In Kentucky alone, current statistics

Modern Explorers

You think there are no modern-day explorers like Lewis and Clark? Well think again!

Today's field biologists are considered by many to be "explorers" who strive to locate remnants of remaining natural ecosystems and locate species that are vulnerable to extinction. These biologists travel to remote locations to inventory or explore for rare species and natural communities. Biologists may work in caves looking for seldom-seen beetles or fly in helicopters trying to locate stands of large, old trees. They may explore streams to document the native mussel species and their losses, or a biologist might net endangered bats at night. Biologists also band birds to document their flight paths and home habitats.

Certainly, biologists are explorers in every sense of the word.



indicate that 109 acres per day are converted from natural areas to development or pasture.

Unfortunately, the prosperity of settlement has changed Kentucky and it comes with a price to our natural habitat and wildlife. Plants and animals have become extremely rare as habitat has been changed from forest and prairie to pasture and cities.

We can all assist Kentucky's wildlife habitat:

- by removing non-native "pest" plants that invade our natural areas and prevent our native species from thriving.
- by leaving natural habitat as a buffer along streams for birds, butterflies and other insects.
- by recycling and reusing paper, metal and other materials to reduce impacts on forests and waterways.
- by conserving energy and using fuel-efficient vehicles to reduce our need for natural resource extraction.
- by learning about endangered species in your county to encourage their protection.
- by planting native species at

schools, in yards and throughout farm lands to enhance habitat and provide sources of food and home sites for wildlife.

Another way to help protect Kentucky's remaining wildlife and natural habitats is to buy a nature license plate for your automobile. The extra \$10 for a nature plate goes to the Kentucky Heritage Land Conservation Fund, which awards grants to state agencies, state and local government and state colleges and universities for the purchase and preservation of selected natural areas. (For additional agencies that assist in the preservation of Kentucky's remaining habitat, go to Page 11 to view their Web sites.)

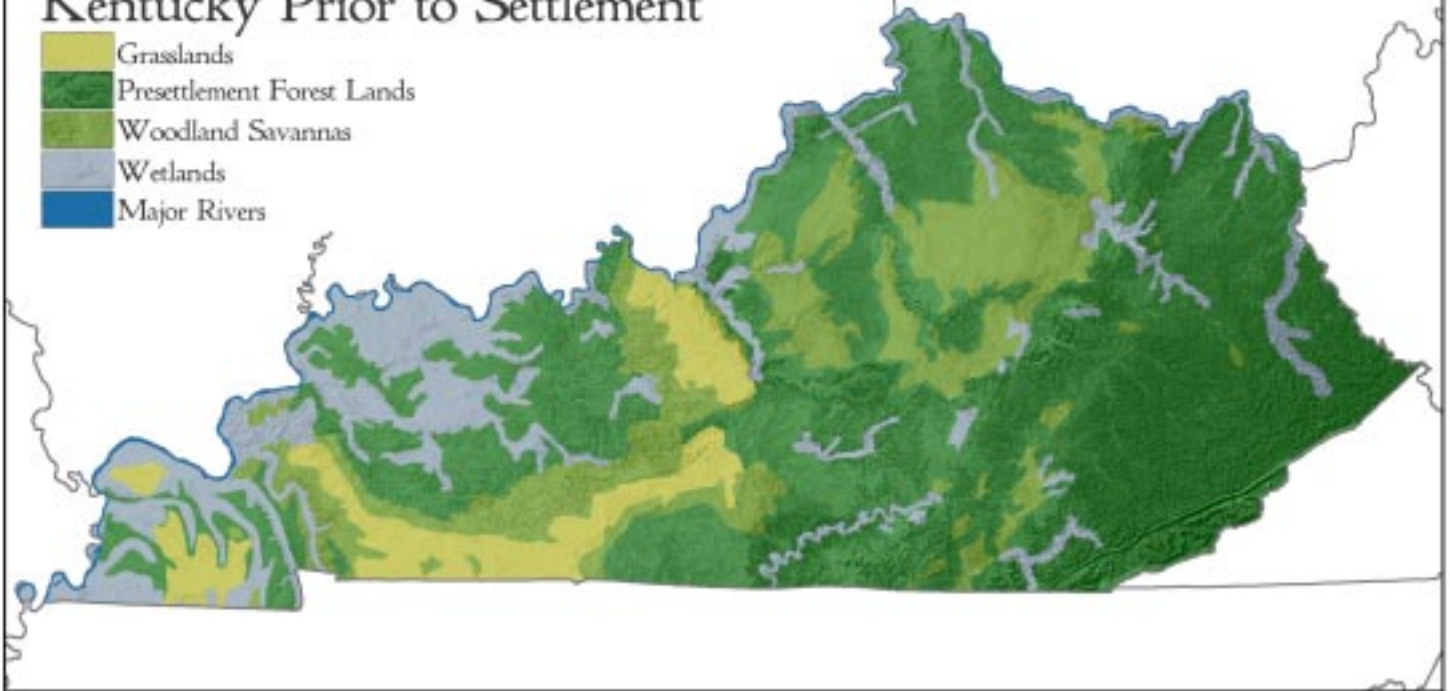
Kentucky will never return to the lush abundance of many species of plants and animals that were present when Lewis and Clark first visited. However, continued protection of the Commonwealth's remaining natural areas and land development sensitive to environmental factors can help ensure that the biologically diverse natural heritage may still be around for another 200 years.

Continued on Page 11

KENTUCKY THEN & NOW

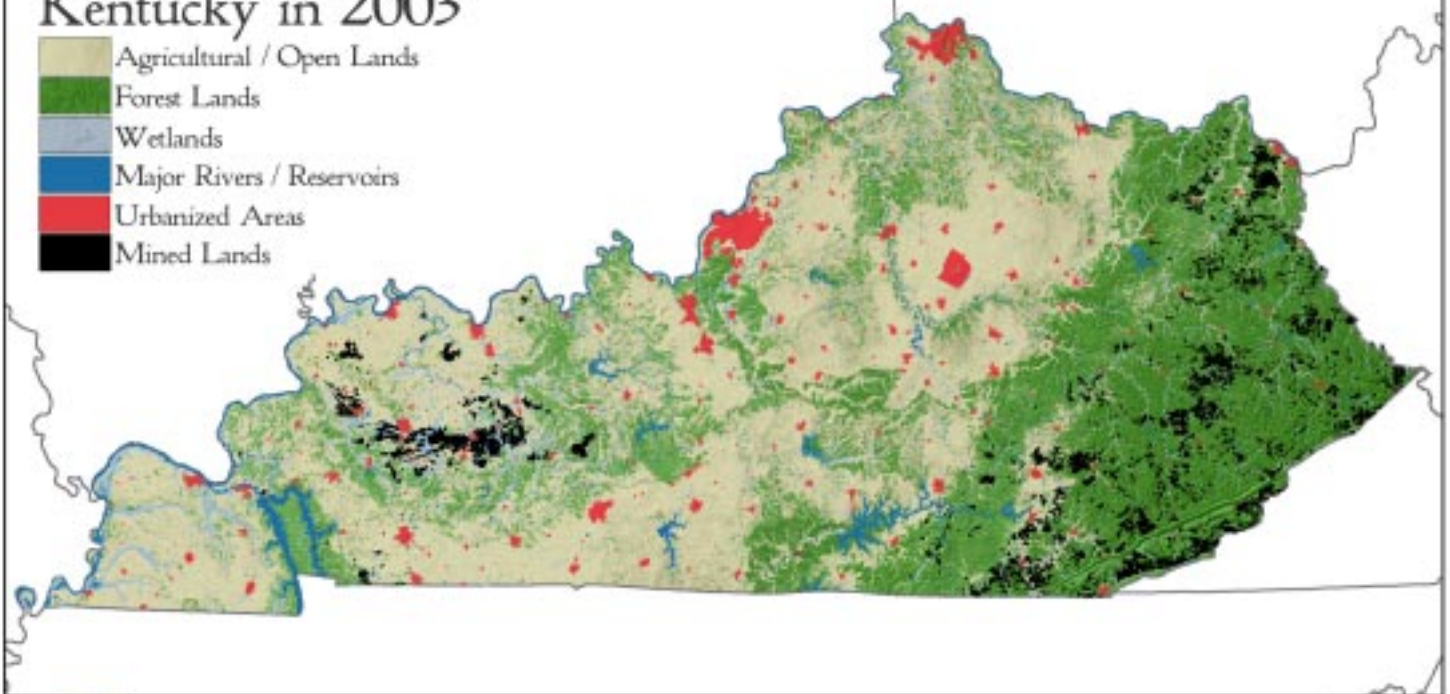
Kentucky Prior to Settlement

- Grasslands
- Presettlement Forest Lands
- Woodland Savannas
- Wetlands
- Major Rivers



Kentucky in 2003

- Agricultural / Open Lands
- Forest Lands
- Wetlands
- Major Rivers / Reservoirs
- Urbanized Areas
- Mined Lands



Less than 1 percent of the woodland savannas, grasslands (prairie and barrens) and presettlement forests that covered Kentucky 200 years ago occur here today (Kentucky Natural Heritage Database 2003). Kentucky has lost over 80 percent of its original wetland acreage (Dahl and Johnson 1991).



Maps produced by Greg Abernathy, Kentucky State Nature Preserves Commission

Community meetings help citizens learn about new air quality standards

Continued from Page 2

each year is used for three consecutive years in determining the final average. If that three-year average is .084 ppm or less the area is meeting the standard; if the average is .085 ppm or greater, the area is considered in violation.

Based on the monitoring data from 2001-03, several areas of the state are showing violations of the 8-hour ozone standard. They include the Louisville area, northern Kentucky, and Christian and Boyd counties. The number of areas violating the standard are substantially fewer today than for previous monitoring periods.

"We must develop the best plan possible for each of these areas," stated John Lyons, director of the Division for Air Quality. "We must develop plans to bring our local areas back into compliance with the air quality standards for the health of our citizens, while limiting to the extent possible the fiscal impacts on the economy in these areas."

Coming close on the heels of implementation of the 8-hour ozone standard is the new PM2.5, or fine particulate standard. Unlike ozone, which only forms during the hot, summer months, fine particulate is a year-round problem. Fine particulate can either be emitted directly or formed from other pollutants being emitted. Diesel particles from motor vehicles, iron oxides from iron and steel mills and soot from wood burning are emitted directly into the air. However, fine particulates are also formed from sulfur dioxide and nitrogen oxides from power plants and industrial facilities, automobiles and other sources that burn fossil fuels.

Fine particles, like ozone, can present a problem for healthy people, and can seriously impact those with existing respiratory or pulmonary illnesses. Associated with health impacts are the potential economic impacts from increased hospitalizations, medication increases, and absences from work and school. Fine particles can have an impact at both short- and long-term exposures.

Several areas of the state are anticipated to have air quality not meeting this new particulate standard (see Kentucky maps on Page 2).

The EPA has not issued any guidance on implementation strategies to date, so it is unclear what the implications of nonattainment may be at this time. However, one thing is for certain—for each area designated as not meeting the standard, plans will have to be made to bring the area back into compliance, whatever the EPA's final timetable will be.

States are required to submit proposed designations under the fine particulate standard to the EPA by Feb. 15, 2004, with final designations occurring by Dec. 15, 2004. Revisions to the State Implementation Plan to document plans to bring these areas back into attainment will be due in late 2007 or early 2008.



The nature of Kentucky *then and now*

Continued from Page 9

Several state and federal agencies, along with independent conservation organizations, work to preserve the remaining habitat for animals and plants that are endangered by land use and other changes in our state. For additional information, check out their Web sites at:

The Kentucky State Nature Preserves Commission <http://www.naturepreserves.ky.gov/>, Natural Resources and Environmental Protection Cabinet <http://www.environment.ky.gov/>, Department of Fish and Wildlife Resources <http://www.kyafish.com> and U. S. Fish and Wildlife Service <http://www.fws.gov/>

Private organizations like The Kentucky Natural Lands Trust <http://www.knlt.org>, The Nature Conservancy <http://nature.org/wherewework/northamerica/states/kentucky/> and a host of local, regional and national groups also work to protect our natural areas.

Also check out the Southeast Exotic Pest Plant Council www.se-eppc.org, Kentucky Environmental Education Council <http://www.state.ky.us/agencies/envred/>, Kentucky Environmental Quality Commission <http://www.eqc.ky.gov/>, Kentucky Native Plant Society <http://www.knps.org/> and Kentucky Heritage Land Conservation Fund Board <http://www.heritageland.ky.gov/>



Let's polish Kentucky's tarnished beauty

The Natural Resources and Environmental Protection Cabinet would like your organization to turn over a new leaf—and then pick up the cigarette butt that's hiding underneath.

March 21-27 marks the 6th Annual Commonwealth Cleanup Week, an environmental restoration project for responsible civic, government, business and religious organizations interested in coordinating efforts to clean up roadsides, haul trash out of illegal dumps, and tidy up streams and lakes.

Nonprofit organizations can win money for helping the cabinet clean up Kentucky. Register through your local solid waste coordinator and complete a cleanup project to be entered in a random drawing for three prizes, including \$1,500, \$1,000 and \$500. For more information about Commonwealth Cleanup Week, contact your solid waste coordinator or visit the Division of Waste Management Web site at www.waste.ky.gov.



Preparations in place for upcoming Youth Environmental Summit

By Kate Shanks
Office of the Secretary

On March 21, 2004, high-school students from across the state will convene at the Galt House in Louisville for one purpose. They will be discussing transportation, growth and the environment. The 2004 Youth Environmental Summit marks the second year for the program, and students and their teachers are preparing for this youth-driven event.

Last spring, 118 students (representing 12 schools) and 50 adults met to discuss issues concerning smart growth. Students studied their own community's growth patterns and recognized the effects of unplanned growth. They were charged with the task of planning how they wanted their communities to look.

Among other topics, students studied the effects of visual pollution and abandonment of downtown districts. They prepared posters depicting these effects and also made a presentation to the summit attendees (fellow students, policy-makers and other interested adults). The summit provided an excellent opportunity for students to meet from around the state and discuss issues in their own communities, while gaining perspective on issues concerning other parts of the state.

Jane Eller, director of the Kentucky Environmental Education Council, stated that, "The Youth Environmental Summit is not a place where students come to listen to adults. Rather, it is an opportunity for students to do research on how their own communities plan for growth and then present their findings to adults both at the summit and in their home communities. The research they do to gain this understanding also helps improve their academic achievement."

Boyle County High School teacher and summit attendee Jamie Hester said, "I think that anytime you can allow people of any age to experience awareness, the rest will follow—the change in perspective, the concern, the activism." Her students commented that they enjoyed the opportunity to present at the summit and were surprised that their community seemed to be aware of sustainable development.

This year students are continuing their study of growth in their local communities. They will be focusing their attention on transportation and its effects on land use, human health, environmental quality and historic places. As a way of understanding how their communities develop, students will be preparing



Involving students in the Governor's Conference on the Environment

Students from the 2003 Youth Environmental Summit presented their study of community growth at the Governor's Conference on the Environment in October. (See *Setting the Stage for Continued Success* on Pages 17-18). The presentation gave the students from Boyle County High School (above) the opportunity to express their concerns and opinions about smart growth and the effects of visual pollution to conference attendees. The students showed pictures of their community and asked conference attendees to participate by commenting on the pictures.

This group also spoke with local planning officials after presenting at the Youth Environmental Summit (see article at left). Former Natural Resources and Environmental Protection Cabinet Secretary Henry List stated, "It was a wonderful opportunity for policy-makers to hear from the youth of our state on an important issue. I appreciate their interest and hard work."

posters depicting the history of transportation in their areas and will be presenting a transportation plan for future development to conference attendees. Students will also be forming discussion groups to better understand the topic and to increase interaction.

In an effort to provide additional learning opportunities, students will attend field trips around the Louisville area to better understand the role of transportation in our lives.



**2004
Youth
Environmental
Summit (YES)**

It's not too late for teachers or community leaders to get students involved in this year's summit. Interested leaders should contact the Kentucky Environmental Education Council at (800) 882-5271. Teachers and group leaders will receive free training and curricula materials to help guide their students throughout their project development. Transportation, lodging and meals are paid for through the Kentucky Transportation Cabinet, Geographic Alliance and the YES Planning Committee.

**Galt House
March
21-22**

Kentuckians visit high-performance schools in North Carolina

Articles by Julie Smither
Division of Energy

Last fall, a group of Kentucky architects and school officials planning new school construction visited three schools in the Raleigh-Durham area of North Carolina to learn about high-performance, energy-efficient design and the feasibility of applying it to their construction projects.

High-performance schools are designed on an integrated, holistic approach, resulting in buildings that are energy efficient and cost effective. Initial costs are typically the same or only slightly higher than conventional buildings because of this integrated design. For instance, properly designed daylighting can reduce or eliminate the need for electric illumination in a classroom. If lights, which generate heat, are not on as often, cooling equipment can be downsized, resulting in lower initial construction costs.

High-performance schools are also better environments in which to work and learn. At the schools visited, Kentucky school officials, and the architects and engineers they work with, talked with the people who designed the schools, as well as teachers, administrators and maintenance staff who use the schools on a daily basis. Those fortunate enough to work in high-performance schools agree that these schools provide:

- better student performance;
- increased average daily attendance;
- increased teacher satisfaction and retention;
- reduced operating costs;
- reduced liability exposure;
- a positive influence on the environment; and
- increased opportunities for using the facility itself as a teaching tool.

These better learning environments also result in higher test scores. One recent study found that students in classrooms with good daylighting progressed 20 percent faster on math tests and 26 percent better on reading tests in one year in comparison to those with the least amount of daylight.

High-performance schools make sense for Kentucky, where major renovations and new construction totaled \$500 million last year. And with new revenue authority at the local level, the same pace can be expected to continue in the next couple of years.

Hancock County Public Schools are looking at daylighting options for a new elementary school, and Kenton County Public Schools recently issued a request for proposals that required design firms to address a host of high-performance features for two new schools the district is building.

Soon, school officials will not have to go to North Carolina to tour high-performance schools. They will be on the ground in Kentucky, and their students and communities will be reaping the benefits.



Natural daylight streams into a gymnasium (left) and media center (above), creating well-lit spaces that appeal to both students and faculty of these North Carolina schools.

Division of Energy photos

Green Building Council in Kentucky

The U.S. Green Building Council (USGBC) is the nation's foremost coalition of leaders from across the building industry working to promote buildings that are environmentally responsible, profitable and healthy places to live and work (visit www.usgbc.org). The Division of Energy is working with a group of Kentucky architects, engineers, HVAC equipment suppliers and others to establish a Kentucky Chapter of the USGBC.

The Kentucky chapter will help achieve the division's goals by providing information to building design professionals that will help them keep abreast of the latest developments in designing the best possible buildings with the resources available to them. Since June 2003, the Kentucky chapter has been meeting monthly, with between 30 to 40 people participating in these meetings.

The USGBC's LEED (Leadership in Energy and Environmental Design) program is a Green Building Rating System™ that is a national standard for developing high-performance, sustainable buildings. One of the first goals of the Kentucky chapter is to organize a LEED training conference in Kentucky.

To join the Kentucky chapter or for more information contact Gregory.Guess@ky.gov at the Division of Energy or phone (800) 282-0868.



Positive results keep adding up after reclamation project ends

By Mark Meade

Department for Surface Mining Reclamation and Enforcement

Located in the Back Creek watershed of Bell County, Ky., the Pruden–Fonde reclamation project was once a 50-acre complex of abandoned coal refuse piles, slurry ponds, mine seeps and landslides. In the 1940s and 1950s coal mine refuse and slurry were dumped in the watershed from deep mine operations. The original creek channel was diverted and filled with the pyrite-rich refuse that towered more than 40 feet above the diverted stream channel, discharging a massive sediment and acid load into the receiving stream. Consequently, landslides developed from contour strip mining and augering of both sides of the watershed.

The unstable refuse piles and embankments attracted motorcycle and all-terrain vehicle enthusiasts, and open dumping became prevalent at several sites in the project area. These hazards, as well as increased flooding caused by the refuse eroding directly into the stream, prompted the Kentucky Division of Abandoned Mine Lands (AML) to design a reclamation plan and bid a construction contract to abate the environmental and safety hazards on the site.

Jackson & Jackson Reclamation Services Inc. of Fall Rock, Ky., received the

contract in May 2001 to begin working on the project, which included grading 30 acres of refuse to a stable configuration.

To begin the project, the refuse next to the stream was graded to a more stable slope. Ten acres of slurry ponds were filled and graded to provide positive drainage, and an agricultural limestone barrier was placed on top of the graded refuse. In addition, soil material was excavated from a 10-acre landslide area and placed on top of the graded refuse and limestone barrier, which provided a medium for vegetative growth.

Diversion ditches were also installed on the slopes of the graded refuse. The diversions were lined with a layer of limestone sand, topped with limestone riprap. In addition to providing erosion control the limestone channels increase the alkalinity of the water, buffering the acid mine drainage seeping from the refuse.

Back Creek was stabilized along the 2,200 feet of its length that passed through the mine refuse area. Boulders and cobbles were placed in the stream along with meanders, pools and riffles. The cut banks of meanders were armored with boulders and the unarmored inside bends, or point bars, were revegetated with

woody riparian species. Live willow and river birch stakes were inserted into the ground in the riparian zone.

All disturbed areas were limed, fertilized, seeded and mulched. The trash that was encountered on the



site was hauled to an approved landfill.

The project, completed in March 2002, totalled \$838,573, well below the engineer's estimate of \$1,195,713.

The Appalachian Clean Stream Initiative (AML funds) provided partial funding for construction of the project in the amount of \$528,976.

The reduction of sediment and acid loading in the watershed as a result of the Pruden–Fonde refuse reclamation project has reduced flooding and stresses on aquatic life in area streams and has turned a once barren landscape into a productive vegetated site.

A portion of the amount expended on this project is being used as state share match money for a federally funded Environmental Protection Agency 319 grant project abating acid mine drainage in another watershed, further extending the positive results of this project.

To learn more about the Kentucky Abandoned Mine Lands program go to <http://www.surfacemining.ky.gov/aml/> To view an online slide show of the project go to http://www.surfacemining.ky.gov/aml/projects/pruden_fonde.htm



ABOVE: A waterfall is nestled between coal refuse piles that are totally devoid of plant life. All-terrain vehicle and motorcycle riders found these steep slopes a sporting challenge.

LEFT: Division of Abandoned Mine Land personnel take in the reclaimed site that is now home to lush vegetation and compare it to a photo from prereclamation conditions. AML photos



Patton appoints panel members for 2004

By Rose Marie Wilmoth
Department for Environmental Protection



The Air Quality Small Business

Advisory Panel has announced its appointments for 2004. The program was designed by the state Division for Air Quality to comply with the federal Clean Air Act Amendments of 1990. The amendments include provisions that direct each state to establish an assistance program providing small businesses with information about regulatory requirements under the act. The panel has been meeting quarterly since March 1995, and its members assist with program review and outreach.

Former Gov. Paul Patton announced the following appointments: Rep. Ruth Ann Palumbo, Lexington; Rep. Jimmy Higdon, Lebanon; and Steve Dale, Economic Development Cabinet. Reappointed were Diana Andrews, Natural Resources and Environmental Protection Cabinet; Jon Trout, Louisville Metro Air Pollution Control District; Stephen D. Merrick, Somerset Wood Products; and Jean G. Watts, Lexington Community College. New members were sworn in and received orientation conducted by the Department for Environmental Protection in October. Tracy Lyn Knowles, Lexington Community College, was also appointed and will be sworn in and receive orientation in January.

New officers for the panel include current panel member Donnie Snow, president of All-Rite Ready Mix Concrete from Florence and Wilder, Ky., elected chair, and Jon Trout, a charter member of the panel, elected vice chair. Snow received a small business air quality stewardship award in 2000 and represents small businesses that are subject to the air quality regulatory program. Trout has served as chair and vice chair for several terms and is a leader in developing panel bylaws and the committee system.

The panel will be holding its quarterly meetings on Jan. 26, April 26, July 26 and Oct. 12 this year. The first three meetings will begin at 1:30 p.m. at the Division for Air Quality, 803 Schenkel Lane, Frankfort, Ky. The location and time of the October meeting will be announced at a later date. Agendas are available in advance by calling (800) 926-8111 or (502) 564-2150.



Children's health are Kentucky's kids at risk?

Continued from Page 5

Studies have demonstrated that ozone pollution, hazardous air pollutants and fine particles in the air have significant potential to harm children with asthma. It is anticipated that eight counties in Kentucky will be designated nonattainment for the new more protective 8-hour ozone and fine particle (PM 2.5) standards (see *Community meetings help citizens learn about new air quality standards* on Page 2).

Secondhand smoke is another contributing factor to asthma in children. Kentucky has one of the highest smoking rates in the nation at 30.5 percent, according to Dr. Rice Leach, commissioner of the Kentucky Department for Public Health.

Kentucky's children face a number of other environmental hazards, such as exposure to mercury and PCBs. Urban sprawl-related issues like traffic congestion, brownfields and lack of greenspace can also contribute to the growing childhood health problems of obesity and Type II diabetes.

An in-depth report on children's environmental health can be reviewed by visiting the EQC Web site at www.eqc.ky.gov.



Conservation easements—win-win for landowners and conservationists

Continued from Page 1

Long-term stewardship and accompanying costs are the responsibility of the easement holder, which is usually a public agency. Therefore, careful planning and adequate staffing for state agency programs are a must. A regularly scheduled monitoring program (using aerial or ground checks) is important to prevent easement violations. Sound legal drafting, clear baseline documentation, organized record keeping, consistent monitoring and diligent enforcement efforts are all part of ensuring the future integrity of conservation easements.

For information about preserving your

lands through conservation easements, visit the Web site of the Land Trust

Alliance Organization at www.lta.org/conserve



Kentucky agencies administering programs that utilize conservation easements:

Heritage Land Conservation Fund, PACE (Purchase of Agricultural Conservation Easements) program, Kentucky State Nature Preserves Commission, Kentucky River Authority, The Bluegrass Conservancy, The Nature Conservancy, Kentucky Heritage Council, Pine Mountain Trail and other projects of the Department of Parks, federal farm conservation programs such as CREP (Conservation Reserve Enhancement Plan) and CRP (Conservation Reserve Program), Kentucky Natural Lands Trust, Forest Legacy Program and Riverfields.

Programs involving restrictions from further development on farmland (agricultural easements) differ from programs prohibiting all development for scenic, historic and natural area protection purposes.

Workshops promote energy-efficient home construction

By Julie Smither
Division of Energy

High-performance homes save energy and money, have healthier indoor air quality and increased marketability.

The Kentucky Division of Energy sponsored 11 one-day workshops, conducted by nationally recognized Southface Energy Institute, on building high-performance homes. The workshops were attended by Kentucky architects, builders, building code officials, engineers and others and focused on the practical aspects of energy-efficient construction, such as controlling air filtration and preventing moisture problems with an energy-efficient thermal envelope.

Diagnostic testing of new and existing homes was explained. This is a procedure that not only models how energy is used

Installing insulation, such as foam board around crawl spaces, will significantly reduce energy consumption in a home.



in a home based on its size and various construction elements, but also uses a “blower door” to pressurize a house and get an accurate indication of how leaky or tight the house is. Participants also learned how to use a free,

easy-to-use Internet software that models a home’s energy efficiency.

The workshops acquainted builders with the current requirements of Kentucky’s building energy codes. It showed them not only how to meet the code, but also the cost-effective strategies to exceed it. A house that is 30 percent more energy efficient than one that meets code is eligible to be designated an ENERGY STAR home. For more information visit the “New Homes” link at www.energystar.gov



A “blower door” test provides an accurate indication of how much heat or cooled air is escaping around doors and windows. Division of Energy photos

Citizens file appeal of agreed orders

By Mark York
Office of the Secretary

A petition filed in the Franklin Circuit Court on behalf of four citizens appeals two agreed orders signed in October 2003 by the Natural Resources and Environmental Protection Cabinet (NREPC) and the U.S. Department of Energy (DOE) that resolves hazardous waste violations at the plant.

The two agreements were negotiated following the signing of a Letter of Intent (LOI) between the NREPC and the DOE in August.

The petition was filed on behalf of Al and Vivian Puckett, Ron Lamb, all of Kevil, Ky., and Mark Donham, of Brookport, Ill.

The petition challenges the agreed orders that resolved outstanding compliance issues at the plant. The orders called for the DOE to pay a \$1 million penalty for notices of violations issued by the state for hazardous waste infractions. The DOE will also spend \$200,000 for environmental improvement projects near the plant.

The petition seeks to have the court vacate the orders entered into by the cabinet based, in part, on allegations that the orders are inconsistent with applicable law.



Excavation work is being performed on the north-south diversion ditch on the Paducah Gaseous Diffusion Plant property. Completion of the major cleanup is expected to take until 2019.

Photo by Gaye Brewer, Division of Waste Management

Setting the Stage for Continued Success

Governor's Conference on the Environment meets to discuss ongoing programs benefitting the people of the Commonwealth



By Cindy Schafer, Office of the Secretary
Photography provided by Creative Services

ABOVE: Opening remarks were provided by former Gov. Paul Patton, flanked by Natural Resources and Environmental Protection Cabinet executive staff, during the awards banquet.

In October, the Governor's Conference on the Environment convened for the first time in two years. During the conference's hiatus, the Natural Resources and Environmental Protection Cabinet (NREPC) worked hard to perfect many of its programs that help protect the state's land, air and water resources.

The theme of this year's conference "Setting the Stage for Continued Success" was chosen to recognize the progress of cabinet initiatives, the ongoing work of its employees and to discuss future challenges facing Kentucky's environment.

The two-day event began with an update on cabinet initiatives, such as mine mapping and watershed management.

The Kentucky Mine Mapping Information System, begun after the Martin County coal slurry spill in 2001, is an example of what cooperating state agencies, using modern Geographic Systems, can do to provide valuable information to businesses and citizens of

Kentucky. The mine mapping Web site currently contains downloadable maps linked to map polygons of documented mined areas in Kentucky that were active during 2002. It also offers mapping of abandoned and active mines in Kentucky's east and west coalfields.

The watershed management framework, something that was just an experiment five years ago, has now become a permanent reality within the cabinet's Division of Water. Monitoring through the watershed process, the pooling of agency resources and targeting have proven a great success. The challenge is the implementation of solutions for stream protection and restoration. The process of pooling resources at the state level and working through watershed interest groups still provides a model to achieve change at the local level.

Environmental education was also among the hot topics. The Kentucky Environmental Education Council's Jane

Eller discussed the upcoming certification program for nonformal environmental educators and the endorsement in environmental education for formal educators.

Karen Deaton, Eastern Kentucky PRIDE, explained how the PRIDE program has been instrumental in providing funds and sponsoring environmental education projects like the "Clean Streams Program."

Due to the seriousness of wildland fires in the eastern and southeastern part of the state, Jennifer Turner with the cabinet's Division of Forestry, talked about the Firewise program and stressed the importance of empowering Kentuckians to be more knowledgeable about protecting their homes and other structures from wildland fires.

The 2003 conference successfully brought together a diverse assembly whose goals were to make a difference in the lives of Kentuckians. Attendees felt it was one of the most productive conferences in recent years.



Environmental Excellence Awards

Nineteen environmentally conscious businesses, organizations and individuals were presented with Environmental Excellence Awards during the Governor's Conference on the Environment.

These awards are given for outstanding efforts to protect, manage and preserve Kentucky's natural resources. Award winners from 2002 and 2003 were honored for their dedication in developing energy- and water-efficient buildings; reducing air emissions during manufacturing processes; and educating community leaders and teachers by coordinating environmental education events.

RIGHT: Former Cabinet Secretary Henry List (far right) presented the Industrial Environmental Leadership award to Outer Loop Recycling and Disposal Facility representatives.
BELOW: Donna Williams accepts the Environmental Education Award from Secretary List.



For complete details of each award winners' achievements visit http://www.environment.ky.gov/homepage_repository/2003+and+2002+EEA+winners.htm



Soil Conservation—Greg and Joan Ritter; Warren County Conservation District.

Energy Conservation—Western Kentucky University and Berea College.

Heritage Land Conservation—Mark S. Brown and Daniel Boone National Forest.

Leadership in Pollution Prevention—Commonwealth Aluminum.

Forestry—Forestry Best Management Practices Board.

Environmental Education—Mary Kathryn Dickerson, Eastern Kentucky Power Cooperative and Donna Williams.

Industrial Environmental Leadership—General Motors Corp., Corvette Assembly Plant and Outer Loop Recycling and Disposal Facility Bioreactor Landfill.

Mining Reclamation-eastern Kentucky—Jamieson Construction and Chisolm Coal Co.

Mining Reclamation-western Kentucky—Kentucky United Coal LLC and Charolais Coal No. 1 LLC.

Community Environmental Leadership—Thoroughbred Resource Conservation and Development Council.

Drinking Water Supply Protection—Georgetown Municipal Water and Sewer Service.

Outstanding employees recognized

Each year the Natural Resources and Environmental Protection Cabinet recognizes its most valued employees for outstanding performance and dedicated service. Seventeen were honored during an awards ceremony at the conference and presented with a plaque. For complete details of each employee's accomplishments visit http://www.environment.ky.gov/homepage_repository/outstanding+employees.htm

FRONT ROW (left to right): Eddie Riddle Jr., Timothy Sullivan, Sara Evans, Samuel Lofton, Rhonda Parsons and Richard Wahrer.

SECOND ROW (left to right): Mark Davis, Diana Andrews, Chip Hovey and John Barnes.

THIRD ROW (left to right): Jeffrey Taylor, Dionne Fields, Demetrio Zourarakis, Rita Hockensmith and James Funk. Karen Deskins and Ronald Cicerello were not present.



Awards

EQC receives Spirit of the River award

By Leslie Cole
Environmental Quality Commission



The Kentucky Environmental Quality Commission (EQC) was recently presented with the 2003 Kentucky Waterways Alliance (KWA) Spirit of the River award for its long dedication to protecting all of Kentucky's waterways, and educating public policy-makers and the general public on water resources and threats.

In presenting the award, KWA President Mary Katherine Dickerson noted that the Kentucky Waterways Alliance was formed 10 years ago in response to a need for a statewide water group who would help local water groups across the state.

A series of meetings across the state,

sponsored by the EQC, documented this need and led to the formation of KWA.

KWA is composed of individual, local and regional groups from across the Commonwealth dedicated to strengthening community and governmental stewardship for the restoration and preservation of Kentucky's water resources. "In this, KWA's 10th year, it is fitting that we honor our roots, the EQC, as a long-term and effective voice for clean water in Kentucky," said Dickerson.

For more information about EQC activities visit its Web site at www.eqc.ky.gov.



EQC Commissioner Patty Wallace (left) accepts the "Spirit of the River" award from Kentucky Waterways Alliance President Mary Katherine Dickerson. Photo by KWA

Two central Kentucky businesses receive awards

By Rose Marie Wilmoth
Department for Environmental Protection

Each year, the Air Quality Small Business Advisory Panel recognizes Kentucky small businesses that have gone beyond regulatory requirements to reduce the impacts of their operations on the state's air quality. Since the award program's inception in 1997, the panel looks for companies that foster an ethic of air quality stewardship when reviewing nominations.

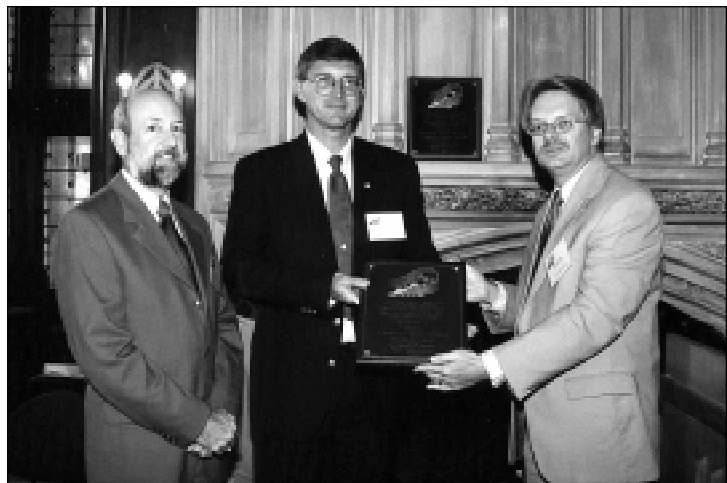
During the October recognition ceremony, Natural Resources and Environmental Protection Cabinet Deputy Secretary Mark York honored two small businesses with Small Business Air Quality Stewardship Awards at the Berry Hill Mansion in Frankfort, Ky.

The 2003 winners are:

Kentucky Ready Mix Concrete Association (KRMCA)—KRMCA represents the concrete industry in Kentucky and has approximately 200 members. The

Brian Harper (center) accepted the 2003 Small Business Air Quality Stewardship Award on behalf of the Kentucky Ready Mix Concrete Association from Deputy Secretary Mark York (right). Jon Trout, Air Quality Small Business Advisory Panel vice chair (left) was there to congratulate Harper.

Photo provided by Creative Services



association received an award for community leadership for utilizing the services of the Small Business Assistance Program to educate its members about air quality compliance. Various companies have been nominated for awards by the association and identified as candidates to serve on the panel. Brian Harper, environmental manager of Pearce Ready Mix Concrete Companies, accepted the award on behalf of KRMCA. Harper commented on how

helpful the Division for Air Quality has been as a service organization to the concrete industry.

Visual Image Systems—Visual Image Systems of Louisville is a family-owned printing company. Visual Image Systems received an award for pollution prevention for investing in a printing system that has low emissions, eliminating the need for venting to the atmosphere.



Competition develops skills in environmental situations

By Martin Bess
Division of Conservation

No longer can FFA members be perceived as just being involved in agricultural activities. Today these blue-jacketed youths also learn about numerous environmental issues. In October, 140 students from across the United States came to the Kentucky Fair and Exposition Center in Louisville and to Publisher's Press near Lebanon Junction to participate in activities hosted by the Environmental/Natural Resources Career Development Event. It is one of 23 different national events that use the fun of competition to connect classroom learning to future careers.

Some of the competitions involved environmental issues interviews, press release writing, environmental/natural resource problem solving, soil nutrient testing and recommending fertilizer needs, water quality analysis, global positioning system (GPS) location exercises and environmental analysis.

The Adair County FFA Team represented Kentucky in these activities and

Students test the level of potassium and phosphorus in soil samples. They will use this information, along with tips from an extension service crop sheet, to suggest fertilizers needed to grow corn.

Division of Conservation
photo



received a Silver Emblem Award for its team efforts. Team members Chad Wheat (silver); Jared Conover (bronze); Carla Drake (bronze) and Josh Karnes (bronze) also received individual recognition.

The top 11 individuals and the national winning team members received scholarships to further their education at a post-secondary institution of their choice. The team from Junction City, Ore., received first place in the National FFA Environmental/Natural Resources Career Development Event.

Sponsors included Michelin Ag. Tires of Greenville, S.C., Ford Division of Dearborn, Mich., and the National FFA

Foundation of Indianapolis, Ind. The Kentucky Association of Conservation Districts, along with local, state and federal agencies hosted the event.

FFA is a national youth organization of 464,267 student members preparing for leadership and careers in the science, business and technology of agriculture, with 7,194 local chapters in all 50 states, Puerto Rico and the U.S. Virgin Islands. FFA strives to make a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education. Visit www.ffa.org for more information.



28 cabinet employees receive awards



Photo by Creative Services

In November, 25 Natural Resources and Environmental Protection Cabinet (NREPC) employees received their Certificate of Management Fundamentals from the Governmental Services Center. The Certified Public Manager program provides management training to individuals seeking to further their education and improve their job performance.

Those recognized were (at left) Cathleen Adams, Donna Conway, Carl Hays, Gwen Holt, Tina Howard, David Jackson, Sreenivas Kesaraju, Jimmy Luttrell, Margaret Morrison and Russell Sharp (along with NREPC Deputy Secretary Mark York who presented the awards). Not photographed were Ottis Bishop, Christine Brand, John Castanis, Justin Dearing, Ramendra Dutta, Stephen Kellerman, Mark, Kennedy, Lola Lyle, Glenna Mays, Kerry McDaniel, Robbie McGuffey, Gerald Morford, Rick Shewekah, Angela Wash and Albert Westerman.

Three additional cabinet employees became Certified Public Manager graduates: Sandra Kelley-O'Daniel, Melissa Highfield Smith and Gleason Wheatley.



Valuable reference guide now available through the KSNPC

By Ronald C. Cicerello
Kentucky State Nature Preserves Commission

The Kentucky State Nature Preserves Commission (KSNPC) has published *A Guide to the Freshwater Mussels of Kentucky*, the state's only complete reference to this diverse and highly imperiled group.

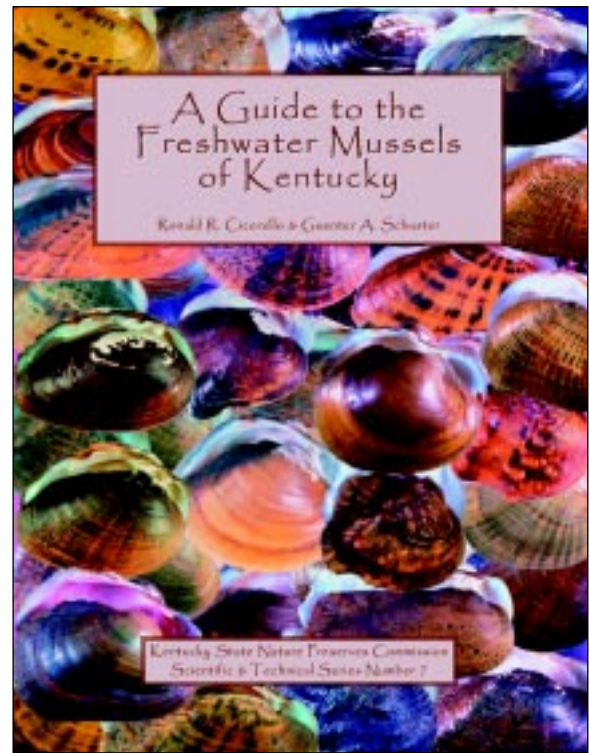
Designed for anyone interested in aquatic organisms, this 62-page, 8 1/2 x 11 inch guide provides information on each of the 104 mussel species documented from Kentucky.

Introductory text and figures briefly describe mussel biology, anatomy, life history, importance and conservation, and provide guidance on making field observations.

Accounts for each species include a color image, shell description, habitat, distribution, similar species and conservation status.

Lists of references and additional literature on Kentucky mussels are included.

To order *A Guide to the Freshwater Mussels of Kentucky* contact the KSNPC at 801 Schenkel Lane, Frankfort, KY 40601 or call (502) 573-2886. The cost of the guide is \$6 per copy.



Graphic provided by KSNPC



This publication is recyclable. Please share it with a friend.

Natural Resources and Environmental Protection Cabinet
Office of the Secretary
5th Floor, Capital Plaza Tower
Frankfort, KY 40601

Presorted Standard
U.S. Postage
PAID
Permit #1
Lexington, KY

Address Service Requested